1: Rosen E-5 (1901-1902) 1924 SK6 Choroti SK6

114 Pilcomayo,[1] whilst our countryman, Professor Lindman, has supplied very valuable contribution to our knowledge of the eastern parts of the Chaco.[2] Among the more important works on the Chaco that had been published prior to our expedition, those by Lozano[3], Peña[4] and Fontana[5] should also be mentioned, as they contain geographical, meteorological, ethnological, zoological and botanical data of great interest.

At the time of our expedition, the regions including the course of the Pilcomayo through the more central parts of the Chaco were, from a scientific point of view, still to a large extent completely unknown. It was in the attempt to explore these regions that Crevaux perished, and in the interior of the Chaco the two explorers, Ibareta and Boggiani, had also been killed by Indians. The murder of Ibareta took place the year before our expedition, and Boggiani fell a victim to the Indians in the same year that we visited the Chaco. Lista, too, met his death in this region shortly before our journey; according to his companions' statement, he took his own life.

After our expedition, and apart from Baron Nordenskiöld, many other explorers, among them the Finlander, Professor Rafael Karsten, have travelled in the Chaco and carried on extensive research work.

133 As I have already mentioned, the Gran Chaco is a partly wooded plain. In the eastern or central parts of the region the ground is not known to present any marked elevations, and it is only in the portion nearest to the Andes that any appreciable hills or rises are found.

Three large rivers, the Pilcomayo (fig. 1), the Bermejo and the Salado (Juramento) flow through the Chaco from north-east to south-west. Besides these, all the year round water-bearing rivers, there are, during the latter part of the dry season, only a very few water courses, the majority of which periodically dry up for part of the year; consequently, the country is exceedingly waterless.

132 During the rainy season, which practically coincides with the summer
133 and, therefore, lasts from and including November until the end of April, the volume of water in the rivers increases rapidly, and here and there the rivers rise above their banks and flood large areas. Beds of water-

[1] Storm.
[2] Lindman (1) and (2).
[3] Lozano (1).
[4] Peña (1).
[5] Fontana (1).

courses that during a great part of the year are without a trace of moisture, in the rainy season turn into mighty rivers (as Rio Seco, fig. 2), and during this period all depressions in the ground are filled with water, so that the dry-soil forests and grass steppes of the Chaco to a large extent are under water. Vast areas then change into typical marshland, with the fauna and flora that characterize marshes.

Fig. 1. The author testing the currents of the Rio Pilcomayo, so as to calculate the course for a later swim across. On the bank, a Bolivian soldier from Fort Crevaux. Gran Chaco. Bolivia.

The climate of the Chaco is tropical. During the summer-half of the year, the heat, especially in the dry-soil forests, is extremely trying. On the open grass steppes the heat is often tempered by currents of air, but in the forests the air is usually perfectly still, and as the stunted and scantily foliaged trees, of which the dry-soil forests of the Chaco mainly consist, hardly afford any shade at all, here the heat feels exceedingly oppressive. In the winter time the heat is naturally not so trying (at nights the temperature may go down to + 10° C.), but dust storms and dearth of water are the cause of long journeys on the Chaco even during this season being often attended by considerable difficulties and discomfort.

2: Nordenskiöld E-5 (1908-1909) 1919
SK6 Choroti SK6
Ashluslay SK5

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tant bags are field-voles, and in some places ostriches and small deer.

The Chaco is intersected by the tropic of Capricorn, and is as a rule very warm. When the cold S. wind sweeps over the plains, however, it is bitterly cold, especially in May and June, and then the Indian, too, likes to wrap himself up in something warm.

A civilization very similar to that of the tribes here mentioned is possessed by their neighbours, the Toba, Mataco, Tapiete and Lengua, as well as some other Indians belonging to that part of the Chaco which is included in the Republic of Paraguay.

In reality the present work deals, not only with the civilization of the Choroti and Ashluslay Indians, but equally with that of the Mataco, Toba, Tapiete and Lengua.

In the Chaco Boreal dwell the little known Tsirakua Indians. Near the Andes dwell the Chiriguano and Chané. The former of these, who are Guarani Indians, emigrated to these districts as late as the early 16th century. They came from the territory E. of the Rio Paraguay.[1])

It was the Chané Indians, at least in part, that had to yield to the Chiriguano the territories where the latter settled at the beginning of the 16th century, and where they still live to-day. They made slaves of the Chané. Remains of this tribe still dwell, as we have mentioned, in the same parts as the Chiriguano. They are now Guaranitied.[2]) Yet a few of the Chané still have something of their original language. It is an Arawak language, and thus belongs to the most widely spread linguistic family in the whole of America. At the beginning of the 18th century numerous Chané Indians were still living in the Chaco Boreal, not far from the Rio Paraguay, where they were vassals of the warlike Mbayá. They are described as being of a higher civilization than their masters. Sánchez Labra-

[1]) Nordenskiold (13).

[2]) Nordenskiold, (8 B) p. 157.